WHAT IS CLAIMED IS:

1. A method of treating a patient in need of cell or tissue transplantation comprising administering to or transplanting into said patient at least one cell or tissue obtained from a cloned ungulate animal or embryo.

2. The method of Claim 1, wherein said patient is a mammal.

3. The method of Claim 2, wherein said mammalian patient is a human.

4. The method of Claim 1, wherein said cloned ungulate is a cloned bovine or porcine fetus, newborn or adult.

5. The method of Claim 4, wherein said cloned bovine or porcine is a fetus.

6. The method of Claim 5, wherein said at least one cell is a fetal dopamine cell, and said cell

transplantation therapy is effected to treat Parkinson's disease or a Parkinsonian-type disease.

7. The method of Claim 1, wherein said cell or tissue has been genetically modified.

8. The method of Claim 7, wherein said genetic modification comprises insertion of heterologous DNA or deletion of native DNA.

9. The method of Claim 8, wherein said heterologous DNA comprises a gene encoding a growth factor, hormone, cytokine or other regulatory protein or peptide which increases survival of the transplanted cells or decreases or inhibits adverse immune reactions or rejection of the transplant in the transplant recipient.

10. The method of Claim 8, wherein said heterologous DNA comprises a suicide gene which allows termination of said therapy through targeted killing of the transplanted tissue or cell.

11. The method of Claim 9, wherein said gene which functions to decrease or inhibit immune reactions is selected from the group consisting of gp39 and anti-apoptosis genes.

12. The method of Claim 11, wherein said anti-apoptosis gene is selected from the group consisting of bcl-2, bcl-x, A20, and Fas-L.

13. The method of Claim 8, wherein said deletion decreases or eliminates the expression of an antigen that stimulates rejection.

14. The method of Claim 13, wherein said deletion blocks or prevents the expression of MHCI, or MHCII antigens, FAS, or α1,3 galactosyltransferase.

15. A method of treating Parkinson's disease comprising transplanting a patient in need of such treatment with a therapeutically effective amount of a cloned, transgenic fetal dopamine cell.

16. A method of treating Parkinson's disease comprising transplanting a patient in need of such treatment with a cloned fetal dopamine neuronal cell obtained by the following method:

(i) inserting a differentiated donor ungulate cell or cell nucleus from an embryo, fetus or adult into an enucleated animal oocyte under conditions suitable for the formation of a nuclear transfer (NT) unit;

(ii) activating the nuclear transfer unit;

(iii) culturing said activated nuclear transfer unit past the embryonic stage until blastocysts are formed;

(iv) transferring blastocysts into a recipient female animal to allow development of a fetus; and

(v) isolating differentiated fetal dopamine neuronal cells from said fetus,

wherein said fetal dopamine cell line has a genotype identical to that of a prior-existing differentiated embryo, fetus or adult ungulate that was not created by nuclear transfer techniques.

17. The method of Claim 1, wherein said patient also receives supplementary treatment in the form of an

immunosuppressant or other drug that increases the survival capability of the transplanted cells or tissue.

Sub A4 > 18. A cloned cell line grown and maintained in an *in vivo* environment, wherein said *in vivo* environment is a cloned bovine.

19. The cell line of Claim 18, wherein said cell line and said bovine have the identical genotype as another prior-existing embryonic, fetal or adult bovine that was not the product of nuclear transfer techniques.

20. The cell line of Claim 18, wherein said cloned bovine is an embryo, blastocyst, fetus, new born or adult cow.

21. The cell line of Claim 18, wherein said cell line is a totipotent or differentiated cell line.

22. The cell line of claim 21, wherein said cell line is differentiated.

23. The cell line of Claim 20, which is a germ or a cell line somatic.

24. The cell line of Claim 19, which is comprised in a culture medium that provides for the stable maintenance thereof.

25. The differentiated cell line of Claim 22, wherein said cell line is a line of dopamine neuron cells.

26. The cell line of Claim 18, wherein said cell line has been genetically modified.

27. The cell line of Claim 26, wherein said genetic modification comprises insertion of heterologous DNA or deletion of native DNA.

28. The cell line of Claim 27, wherein said heterologous DNA comprises a gene encoding a growth factor, hormone, cytokine or other regulatory protein or peptide which increases survival of the cells or decreases or

inhibits adverse immune reactions or rejection of the cells in a transplant recipient.

29. The cell line of Claim 27, wherein said heterologous DNA comprises a suicide gene which allows targeted killing of a cell of said cell line following transplantation.

30. The cell line of Claim 29, wherein said suicide gene is selected from the group consisting of HSV-TK, cytosine deaminase, and a toxin.

31. The cell line of Claim 28, wherein said gene encodes a human growth factor selected from the group consisting of glial-cell line-derived neurotrophic factor, basic fibroblast growth factor (bFGF), insulin-like growth factor-I, brain-derived neurotrophic factor, and nerve growth factor.

32. The cell line of Claim 29, wherein said gene is selected from the group consisting of HSV-TK, cytosine deaminase or both.

Sub A6> 33. A fetal dopamine neuronal cell line obtained by a method comprising:

(i) inserting a differentiated donor ungulate cell or cell nucleus from an embryo, fetus or adult into an enucleated animal oocyte under conditions suitable for the formation of a nuclear transfer (NT) unit;

(ii) activating the nuclear transfer unit;

(iii) culturing said activated nuclear transfer unit past the embryonic stage until blastocysts are formed;

(iv) transferring blastocysts into a recipient female animal to allow development of a fetus; and

(v) isolating differentiated fetal dopamine neuronal cells from said fetus,

wherein said fetal dopamine cell line has a genotype identical to that of a prior-existing differentiated embryo, fetus or adult ungulate that was not created by nuclear transfer techniques.

34. The cell line of Claim 33, wherein said donor ungulate cell is bovine or porcine.

35. The cell line of Claim 33, wherein said donor ungulate cell is non-serum starved.

36. The cell line of Claim 33, wherein said cell line is genetically modified.

37. The cell line of Claim 36, wherein said genetic modification comprises insertion of heterologous DNA or deletion of native DNA.

38. The cell line of Claim 37, wherein said heterologous DNA comprises a gene encoding a growth factor, hormone, cytokine or other regulatory protein or peptide which increases survival of the cells or decreases or inhibits adverse immune reactions or rejection of the cells in a transplant recipient.

39. The cell line of Claim 37, wherein said heterologous DNA comprises a suicide gene which allows targeted killing of a cell of said cell line following transplantation.

40. The cell line of Claim 38, wherein said gene is selected from the group consisting of gp39 and an anti-apoptosis gene.

41. The cell line of Claim 40, wherein said anti-apoptosis gene is selected from the group consisting of bcl-2, bcl-x, and A20.

42. A method of using the cell line of Claim 12, as a continuous and genetically identical source for transplantation purposes, comprising administering cells of said cell line to a patient in need of cell transplantation therapy.

43. The method of Claim 42, wherein said cell transplantation therapy is effected to treat a disease or condition selected from the group consisting of Parkinson's disease, Huntington's disease, Alzheimer's disease, ALS, spinal cord defects or injuries, epilepsy, multiple sclerosis, muscular dystrophy, cystic fibrosis, liver disease, diabetes, heart disease, cartilage defects or

injuries, burns, foot ulcers, vascular disease, urinary tract disease, AIDS and cancer.

44. The cell line of Claim 38, wherein said cell line has been modified to prevent or reduce the expression of genes encoding an antigen involved in the rejection.

45. The cell line of Claim 44, wherein said gene is selected from the group consisting of MHCI, MHCII, FAS, and α1,3 galactosyltransferase.

46. The method of Claim 43, wherein said disease is Parkinson's disease.

47. A method of using the cell line of Claim 33, as a continuous and genetically identical source for transplantation purposes, comprising administering cells of said cell line to a patient with Parkinson's disease or a Parkinsonian-type disease.

48. A method of treating Parkinson's disease in a patient, comprising:

(i) inserting a desired donor ungulate cell or cell nucleus into an enucleated oocyte, under conditions suitable for the formation of a nuclear transfer (NT) unit to yield a fused NT unit;

(ii) activating said fused nuclear transfer unit to yield an activated NT unit;

(iii) transferring said activated NT unit to a host mammal such that the activated NT unit develops into a fetus;

(iv) isolating at least one dopamine cell or mesencephalic tissue from at least one fetus;

(v) transplanting said dopamine cell(s) or mesenphalic tissue into the brain of a patient with Parkinson's disease or a patient demonstrating symptoms of Parkinson's disease such that said disease symptoms are alleviated or decreased.

49. The method of Claim 48, wherein said donor ungulate cell is differentiated.

50. The method of Claim 48, wherein said donor ungulate cell is non-serum starved.

51. The method of Claim 16 wherein said ungulate cell is bovine or porcine.

52. The method of Claim 51 wherein said ungulate cell is bovine.

53. The method of Claim 48 wherein said ungulate cell is bovine or porcine.

54. The method of Claim 53 wherein said ungulate cells is bovine.

55. The cell line of claim 36 wherein said cell line comprises multiple genetic modifications.